



2823  
PATENT APPLICATION  
Do. No. 4591-160

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Hoe-Seong HA and Jun-Eui SONG

Serial No. 09/765,543

Examiner: Estrada, Michelle

Filed: January 19, 2001

Group Art Unit: 2823

For: BORDERLESS CONTACT STRUCTURE AND METHOD OF FORMING  
THE SAME

Confirmation No. 1427

BOX NON FEE AMENDMENT

Assistant Commissioner for Patents,  
Washington, D.C. 20231

Responsive to the Office Action dated December 3, 2002 enclosed is an response to office  
action in the above-identified application.

The fee has been calculated as shown below.

CLAIMS AS AMENDED					
For:	Number After Amendment	Previous Number	Extra	Rate	Additional Fee
Total Claims	10	10	0	x \$18 =	\$0.00
Independent Claims	1	1	0	x \$84 =	\$0.00
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT					\$0.00

\*greater of twenty (20) or number for which fee has been paid

\*\*greater of three (3) or number for which fee has been paid

- ☒ Return Postcard  
☒ Any deficiency or overpayment should be charged or credited to deposit account number 1703.

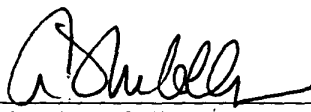
Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.



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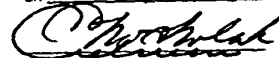
PATENT TRADEMARK OFFICE

  
Alan T. McCollom  
Reg. No. 28,881

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JD

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RESPONSE TO OFFICE ACTION

Responsive to the Office Action, dated December 3, 2002 please amend the  
application as follows.

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IN THE CLAIMS

1. A borderless contact structure comprising:
- a semiconductor substrate having a top surface;
  - a device isolation region formed in a predetermined region of the semiconductor substrate, the device isolation region having a protrusion that is higher in level than the top surface of the semiconductor substrate;
  - an impurity diffusion region formed in an active region surrounded by the device isolation region;
  - an etch stop spacer formed overlying a sidewall of the protrusion;
  - an etch stop layer and an interlayer insulating layer sequentially formed over the resultant structure; and
  - a contact hole opening the interlayer insulating layer and the etch stop layer, the contact hole exposing at least a portion of the impurity diffusion region.

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